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PCT

To:

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NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY

(PCT Rule 71.1)

Date of mailing  
(day/month/year)

21.10.2005

Applicant's or agent's file reference

36234-PCT - 475387-33

**IMPORTANT NOTIFICATION**

International application No.

PCT/US2004/018045

International filing date (day/month/year)

04.06.2004

Priority date (day/month/year)

06.06.2003

Applicant

THE GENERAL HOSPITAL CORPORATION et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international preliminary examining authority:



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# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 36234-PCT	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416
International application No. PCT/US2004/018045	International filing date (day/month/year) 04.06.2004	Priority date (day/month/year) 06.06.2003	
International Patent Classification (IPC) or national classification and IPC G01J3/18, H01S3/10			
Applicant THE GENERAL HOSPITAL CORPORATION et al.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 9 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 10 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand  08.07.2005		Date of completion of this report  21.10.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer  Schmidt, C.  Telephone No. +49 89 2399-2254 	

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/US2004/018045

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements**\* of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

**Description, Pages**

1-20 as originally filed

**Claims, Numbers**

1-47, 52-56 received on 12.07.2005 with letter of 21.06.2005

**Drawings, Sheets**

1/16-16/16 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☒ The amendments have resulted in the cancellation of:
- ☐ the description, pages
  - ☒ the claims, Nos. 48-51
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing (*specify*):
  - ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

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1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:
- ☐ the entire international application,
  - ☒ claims Nos. 1-7(in part), 9-10 (in part)  
because:
    - ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
    - ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
    - ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
    - ☒ no international search report has been established for the said claims Nos. 1-7(in part), 9-10(in part)
    - ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
      - the written form ☐ has not been furnished
      - ☐ does not comply with the standard
      - the computer readable form ☐ has not been furnished
      - ☐ does not comply with the standard
    - ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.
  - ☐ See separate sheet for further details

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**Box No. IV Lack of unity of invention**

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1. ☒ In response to the invitation to restrict or pay additional fees, the applicant has:
- ☐ restricted the claims.
  - ☐ paid additional fees.
  - ☐ paid additional fees under protest.
  - ☒ neither restricted nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
  - ☒ not complied with for the following reasons:  
**see separate sheet**
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
  - ☒ the parts relating to claims Nos. 1-7(in part), 9-10 (in part), 11-16, 52,53 .

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	14,16
	No: Claims	1-7(in part), 9-10(in part),11-13,15, 52, 53
Inventive step (IS)	Yes: Claims	none
	No: Claims	1-7(in part), 9-10(in part), 11-16, 52, 53
Industrial applicability (IA)	Yes: Claims	1-16,52,53
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

### **Section I**

The amended set of claims contains two claims numbered "55". The last of those is considered as claim "56".

### **Section III**

Claims 1-10 do not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claims attempt to define the subject-matter in terms of the result to be achieved, which merely amounts to a statement of the underlying problem, without providing the technical features necessary for achieving this result.

For the purposes of the search and examination these claims have been interpreted as comprising the features of claim 11, which according to the description seems to be the features which can enable the desired result.

### **Section IV**

This Authority considers that there are 5 inventions covered by the claims indicated as follows:

- 1: Claims 1-7, 9-16, 52, 53** directed to an apparatus for filtering electromagnetic radiation having a plurality of beam selecting elements.
- 2: Claim 17** directed to an apparatus for filtering electromagnetic radiation wherein the signal is reflected from the rotating optical arrangement a plurality of times.
- 3: Claims 18-25, 54** directed to an apparatus for filtering electromagnetic radiation wherein the pivot point of the rotating arrangement has specific properties.
- 4: Claims 8, 26-43, 55, 56** directed to a source of light, in particular a laser gain medium.
- 5: Claims 44-47** directed to an apparatus comprising first and second arrangements for providing first and second radiation as well as means for detecting interference.

The reasons for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, are as follows:

The present application contains 12 independent claims. The common concept linking these claims are the features of independent claim 11. (It should be noted that due to severe lack of clarity (Article 6 PCT) in claims 1-10 due to a definition by result to be achieved only, these claims have been interpreted in accordance with the description to encompass the features of claim 11.)

However, this common concept, ie the features of claim 11, is already known from document D1=WO 02054027 A which discloses:

An apparatus for filtering an electromagnetic radiation, comprising (see Abstract and figure 1):

- at least one spectral separating arrangement configured to physically separate one or more components of the electromagnetic radiation based on a frequency of the radiation (optical grating 110);
- a further arrangement which is configured to receive at least some of the one or more components, and modify at least one characteristic of the received component to forward at least one signal associated with the component (eg the aperture 135);
- at least one continuously rotating optical arrangement which is configured to receive at least one signal that is associated with the one or more components (rotating polygon 115); and
- at least one beam selecting arrangement configured to receive the at least one signal (aperture 135).

It follows that the further independent claims as well as claims 16 and 17 depending on claim 11 define different inventions having different special technical features within the meaning of Rule 13.2 PCT as defined above.

The problem to be solved by these special technical features can be construed as:

**Claim 16:** to provide for multiple selection of spectral components, for example to enable multiple band detection or multiple band illumination.

**Claim 17:** to increase speed by reflecting a plurality of times.

**Claims 18-25, 54:** to optimise the optical properties of the system with respect to the pivot point of the rotating mirror.

**Claims 8, 26-43, 55-56:** to provide a source of light, in particular a laser gain medium, having fast tuning.

**Claims 44-47:** to provide an interference system with a reference light source and a sample light source.

Further, also examining the possible correspondence by technical effect, it follows immediately from the above stated that the technical effects of the different groups do not correspond.

Consequently, neither the objective problem underlying the subjects of the claimed inventions, nor their solutions defined by the special technical features allow for a relationship to be established between the said inventions, which involves a single general inventive concept.

In conclusion, the groups of claims are not linked by common or corresponding special technical features and define different inventions not linked by a single general inventive concept.

The application, hence does not meet the requirements of unity of invention as defined in Rules 13.1 and 13.2 PCT.

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**With respect to Claims 1-7, 9-16, 52, 53**

Reference is made to the following document/s/:

- D1: WO 02/054027 A (CORETEK INC) 11 July 2002 (2002-07-11)
- D2: US-A-2 339 754 (BRACE PORTER H) 25 January 1944 (1944-01-25)
- D3: US-A-4 993 834 (CARLHOFF CHRISTOPH ET AL) 19 February 1991 (1991-02-19)
- D4: EP-A-0 110 201 (KOEZPONTI ELELMISZERIPARI) 13 June 1984 (1984-06-13)
- D5: US-A-5 040 889 (KEANE THOMAS J) 20 August 1991 (1991-08-20)
- D6: US-A-4 601 036 (FAXWOG, MOCKER) 15 July 1986 (1986-07-15)
- D7: US-A-4 868 834 (FOX, AHL) 19 September 1989 (1989-09-19)



D8: WO 98/35203 A (SWANSON) 13 August 1998 (1998-08-13)  
D9: US-A-5 975 697 (PODOLEANU, JACKSON) 2 November 1999 (1999-11-02)  
D10: US-A-5 459 570 (SWANSON, HUANG ET AL) 17 October 1995  
D11: US-B1-6 341 036 (TEARNEY, BOUMA, WEBB) 22 January 2002

- 1.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of 11 is not new in the sense of Article 33(2) PCT.  
As discussed above under Section IV, document D1 discloses an apparatus having all the features of present claim 11.  
It should in particular be noted that the feature of a further arrangement modifying an unspecified characteristic is so broad that it can also be read onto the aperture of D1, since an aperture modifies the light beam which impinges upon it.

The same objection can be raised in view of document D2: see figure 2 and page 2, right hand column, lines 8 to 44.

Moreover, also the documents D6, D7 and D8 can be read upon this claim (see Abstract and figure). In particular it is noted that in D8 the lens 62 can be considered as a further arrangement; in D6 and D7 the beam impinges twice onto the polygon mirror so that this mirror serves as a further arrangement.

- 1.2 Independent claim 1 as well as dependent claims 2-7,9,10 and 12 to 16 do not contain any features which, if applicable in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step:

**Claims 1 to 7:** as far as these claims are interpreted in the light of the description (see Section III) it would appear that since the constructional features of the above cited documents are the same as those of the present application, the parameter values indicated as a result to be achieved are also implicit in these documents. With respect to the wavelength ranges claimed, these fall within the normal range for such filters (D1: page 6, l. 8).

**Claims 9 and 10:** these features are already known from D1 and D2, see above.

**Claims 12 to 15:** these claim define only minor constructional features which are well known from eg D1 and /or D2 or which are well known equivalents.

**Claim 16:** the feature of providing multiple beam selecting elements, such as apertures, is considered obvious for the skilled person. As can be seen from eg D3 it is well known in the art to provide for a multi slit detection arrangement. It would thus be obvious for the skilled person to include multiple slits or other beam selecting elements if a plurality of beams are to be used simultaneously. It is obvious that these plural beams may then be combined if this is desired.

**Claims 52 and 53:** in D8 the further arrangement comprises a lens and in D6/D7 the angle is modified upon the second reflection (see also above under 1.1).

1. An apparatus comprising:  
an arrangement emitting an electromagnetic radiation that has a spectrum whose mean frequency changes substantially continuously over time at a tuning speed that is greater than 100 terahertz per millisecond.
2. The apparatus according to claim 1, wherein the mean frequency changes repeatedly at a repetition rate that is greater than 5 kilohertz.
3. The apparatus according to claim 1, wherein the mean frequency changes over a range that is greater than 10 terahertz.
4. The apparatus according to claim 3, wherein the spectrum has a tuning range whose center is approximately centered at 1300 nm.
5. The apparatus according to claim 3, wherein the spectrum has a tuning range whose center is approximately centered at 850 nm.
6. The apparatus according to claim 3, wherein the spectrum has a tuning range whose center is approximately centered at 1700 nm.
7. The apparatus according to claim 1, wherein the spectrum has an instantaneous line width that is smaller than 100 gigahertz.
8. The apparatus according to claim 1, further comprising a laser cavity with a roundtrip length shorter than 5 m which receives the electron-magnetic radiation.
9. The apparatus according to claim 1, further comprising a polygon arrangement which is adapted to receive at least one signal that is associated with the emitted electromagnetic radiation, and at least one of reflect and deflect the at least one signal to a further location.
10. The apparatus according to claim 1, further comprising a beam separating arrangement which receives the electromagnetic radiation and transmits at least components of the electromagnetic radiation.

11. An apparatus for filtering an electromagnetic radiation, comprising:  
at least one spectral separating arrangement configured to physically separate one or more components of the electromagnetic radiation based on a frequency of the electromagnetic radiation;  
a further arrangement which is configured to receive at least some of the one or more components, and modify at least one characteristic of the received one or more components to forward at least one signal which is associated with one or more further components of the electromagnetic radiation;  
at least one continuously rotating optical arrangement which is configured to receive the at least one signal; and  
at least one beam selecting arrangement configured to receive the at least one signal.
12. The apparatus according to claim 11, wherein the at least one spectral separating arrangement includes at least one of a diffraction grating, a prism, a grism, an acousto-optic beam deflector, a virtual phased array, and an arrayed waveguide grating.
13. The apparatus according to claim 11, wherein the continuously rotating optical arrangement is at least one of a polygon mirror, a diffractive element, a substantially opaque disk having an array of substantially transparent regions, and a substantially transparent disk having an array of substantially reflective regions.
14. An apparatus for filtering an electromagnetic radiation, comprising:  
at least one spectral separating arrangement configured to physically separate one or more components of the electromagnetic radiation based on a frequency of the electromagnetic radiation;  
at least one continuously rotating optical arrangement which is configured to receive at least one signal that is associated with the one or more components; and  
at least one beam selecting arrangement configured to receive the at least one signal, wherein the at least one spectral separating arrangement includes a holographic grating, wherein the continuously rotating optical arrangement includes a substrate, and wherein the holographic grating is mounted on the substrate.

15. The apparatus according to claim 11, wherein the beam selecting arrangement is at least one of an optical fiber, an optical waveguide, a pinhole aperture, a combination of a lens with the optical fiber, the waveguide and the pinhole, and a spatial filter.

16. The apparatus according to claim 11, wherein the beam selecting arrangement includes a plurality of beam selecting elements, wherein the electromagnetic radiation which is transmitted by the plurality of beam selecting elements is combined.

17. The apparatus according to claim 11, wherein the at least one signal is reflected from or propagates through the at least one continuously rotating optical arrangement a plurality of times before being received by the at least one selecting arrangement.

18. An apparatus for filtering an electromagnetic radiation comprising:  
at least one spectral separating arrangement configured to angularly separate one or more components of the electromagnetic radiation based on a frequency of the electromagnetic radiation;

at least one angularly deflecting optical arrangement that includes a pivot point, and configured to receive the one or more components of the electromagnetic radiation to generate at least one signal associated with the one or more components;  
and

at least one optical imaging arrangement configured to directly receive from the spectral separating arrangement the one or more components of the electromagnetic radiation, and generate an image of one or more dispersive elements associated with the one or more components toward the deflecting optical arrangement.

19. An apparatus for filtering an electromagnetic radiation, comprising:  
at least one spectral separating arrangement configured to angularly separate one or more components of the electromagnetic radiation based on a frequency of the electromagnetic radiation;

at least one angularly deflecting optical arrangement that includes a pivot point, and configured to receive the one or more components of the electromagnetic

radiation to generate at least one signal associated with the one or more components;  
and

at least one optical imaging arrangement configured to receive the one or more components of the electromagnetic radiation, and generate an image of one or more dispersive elements associated with the one or more components; and

at least one beam selecting arrangement adapted to receive the at least one signal, and selectively generate at least one selected signal, wherein a position of the pivot point is provided in a proximity of a virtual image of at least one of the dispersive elements.

20. An apparatus for filtering an electromagnetic radiation, comprising:

at least one spectral separating arrangement configured to angularly separate one or more components of the electromagnetic radiation based on a frequency of the electromagnetic radiation;

at least one angularly deflecting optical arrangement that includes a pivot point, and configured to receive the one or more components of the electromagnetic radiation to generate at least one signal associated with the one or more components;  
and

at least one optical imaging arrangement configured to receive the one or more components of the electromagnetic radiation, and generate an image of one or more dispersive elements associated with the one or more components; and

at least one beam selecting arrangement adapted to receive the at least one signal, and selectively generate at least one selected signal, wherein a position of the pivot point is provided in a proximity of a real image of at least one of the dispersive elements.

21. The apparatus according to claim 18, wherein a deflection point of the angularly deflecting optical element substantially overlaps with a real image of at least one of the dispersive elements.

22. The apparatus according to claim 21, further comprising at least one reflector which is configured to receive at least one signal from the at least one angularly deflecting optical arrangement.

23. The apparatus according to claim 18, wherein the at least one of the dispersive elements is at least one of a diffraction grating, a prism, a grism, an acousto-optic beam deflector, a virtual phased array, and an arrayed waveguide grating.
24. The apparatus according to claim 18, wherein the at least one angularly deflecting optical element is at least one of a polygon mirror scanner, a galvanometer mirror scanner, and a piezo-electric mirror scanner.
25. An apparatus for filtering an electromagnetic radiation, comprising:  
at least one dispersive arrangement configured to angularly separate components of the electromagnetic radiation based on a frequency of the electromagnetic radiation, and generate frequency-separated components; and  
at least one angularly deflecting optical element having a pivot point of an angular deflection, wherein the pivot point substantially overlaps a location where substantially all of the frequency-separated components overlap.
26. A source arrangement for providing an electromagnetic radiation, comprising:  
at least one emitter of the electromagnetic radiation;  
at least one spectral separating arrangement configured to physically separate one or more components of the electromagnetic radiation based on a frequency of the electromagnetic radiation;  
a further arrangement which is configured to receive at least some of the one or more components, and modify at least one characteristic of the received one or more components to forward at least one signal which is associated with one or more further components of the electromagnetic radiation;  
at least one continuously rotating optical arrangement which is configured to receive the at least one signal; and  
at least one beam selecting arrangement configured to receive the at least one signal.
27. The source arrangement according to claim 26, wherein the at least one emitter is at least one of a semiconductor optical amplifier, a laser diode, a super-luminescent diode, a doped optical fiber, a doped laser crystal, a doped laser glass, and a laser dye.

28. A source arrangement for providing an electromagnetic radiation, comprising:  
at least one emitter of the electromagnetic radiation;  
at least one spectral separating arrangement configured to angularly separate one or more components of the electromagnetic radiation based on a frequency of the electromagnetic radiation;  
at least one angularly deflecting optical arrangement that includes a pivot point, and configured to receive the one or more components of the electromagnetic radiation to generate at least one signal associated with the one or more components;  
and  
at least one optical imaging arrangement configured to directly receive from the spectral separating arrangement the one or more components of the electromagnetic radiation, and generate an image of one or more dispersive elements associated with the one or more components toward the deflecting optical arrangement.
29. The source arrangement according to claim 28, wherein the at least one emitter is at least one of a semiconductor optical amplifier, a laser diode, a super-luminescent diode, a doped optical fiber, a doped laser crystal, a doped laser glass, and a laser dye.
30. A source arrangement for providing an electromagnetic radiation, comprising:  
at least one laser gain medium providing the electromagnetic radiation;  
at least one spectral separating arrangement configured to physically separate one or more components of the electromagnetic radiation based on a frequency of the electromagnetic radiation;  
a further arrangement which is configured to receive at least some of the one or more components, and modify at least one characteristic of the received one or more components to forward at least one signal which is associated with one or more further components of the electromagnetic radiation;  
at least one continuously rotating optical arrangement which is configured to receive the at least one signal; and  
at least one beam selecting arrangement configured to receive the at least one signal.



31. The source arrangement according to claim 30, further comprising at least one laser cavity receiving the electromagnetic radiation.

32. The source arrangement according to claim 31, wherein the laser cavity is a ring laser cavity.

33. The source arrangement according to claim 30, wherein the laser gain medium is at least one of a semiconductor optical amplifier, a laser diode, a super-luminescent diode, a doped optical fiber, a doped laser crystal, a doped laser glass, and a laser dye.

34. The source arrangement according to claim 30, wherein the at least one spectral separating arrangement provides a frequency sweep continuously in a positive wavelength direction.

35. The source arrangement according to claim 30, further comprising an optical circulator.

36. The source arrangement according to claim 30, wherein wavelength ranges of the at least one laser gain media are not identical to one another.

37. A source arrangement for providing an electromagnetic radiation, comprising:  
at least one laser gain medium providing the electromagnetic radiation;  
at least one spectral separating arrangement configured to angularly separate one or more components of the electromagnetic radiation based on a frequency of the electromagnetic radiation;

at least one angularly deflecting optical arrangement that includes a pivot point, and configured to receive the one or more components of the electromagnetic radiation to generate at least one signal associated with the one or more components;  
and

at least one optical imaging arrangement configured to directly receive from the spectral separating arrangement the one or more components of the electromagnetic radiation, and generate an image of one or more dispersive elements associated with the one or more component toward the deflecting optical arrangement.

38. The source arrangement according to claim 37, further comprising at least one laser cavity receiving the electromagnetic radiation.
39. The source arrangement according to claim 38, wherein the laser cavity is a ring laser cavity.
40. The source arrangement according to claim 37, wherein the laser gain medium is at least one of a semiconductor optical amplifier, a laser diode, a super-luminescent diode, a doped optical fiber, a doped laser crystal, a doped laser glass, and a laser dye.
41. The source arrangement according to claim 37, wherein the at least one spectral separating arrangement provides a frequency sweep continuously in a positive wavelength direction.
42. The source arrangement according to claim 37, further comprising an optical circulator.
43. The source arrangement according to claim 37, wherein wavelength ranges of the at least one laser gain media are not identical to one another.
44. An apparatus comprising:  
at least one first arrangement providing at least one first electromagnetic radiation to a sample and at least one second electromagnetic radiation to a reference, wherein a frequency of radiation provided by the first arrangement varies over time;  
at least one second arrangement detecting an interference between the first and second electromagnetic radiations;  
at least one spectral separating arrangement configured to physically separate one or more components of the first and second electromagnetic radiations based on a frequency of the electromagnetic radiation;  
a further arrangement which is configured to receive at least some of the one or more components, and modify at least one characteristic of the received one or more components to forward at least one signal which is associated with one or more further components of the electromagnetic radiation;

at least one continuously rotating optical arrangement which is configured to receive the at least one signal; and

at least one beam selecting arrangement configured to receive the at least one signal.

45. The apparatus according to claim 44, wherein the reference is non-reflective.

46. An apparatus comprising:

at least one first arrangement providing at least one first electromagnetic radiation to a sample and at least one second electromagnetic radiation to a reference, wherein a frequency of radiation provided by the first arrangement varies over time;

at least one second arrangement detecting an interference between the first and second electromagnetic radiations;

at least one spectral separating arrangement configured to angularly separate one or more components of the first and second electromagnetic radiations based on a frequency of the electromagnetic radiation;

at least one angularly deflecting optical arrangement that includes a pivot point, and configured to receive the one or more components of the electromagnetic radiation to generate at least one signal associated with the one or more components;

at least one beam selecting arrangement adapted to receive the at least one signal, and selectively generate at least one selected signal; and

at least one optical imaging arrangement configured to received the selected signal, and generate an image of one or more dispersive elements associated with the one or more components.

47. The apparatus according to claim 46, wherein the reference is non-reflective.

48. (Cancelled)

49. (Cancelled)

50. (Cancelled)

51. (Cancelled)

52. The apparatus according to claim 11, wherein the at least one characteristic is an angle.

53. The apparatus according to claim 11, wherein the further arrangement includes an imaging system which includes at least one of one or more lenses, a telescopic system or convex mirrors.

54. The apparatus according to claim 18, further comprising at least one beam selecting arrangement adapted to receive the at least one signal, and selectively generate at least one selected signal.

55. The source arrangement according to claim 28, further comprising at least one beam selecting arrangement adapted to receive the at least one signal, and selectively generate at least one selected signal.

55. The source arrangement according to claim 37, further comprising at least one beam selecting arrangement adapted to receive the at least one signal, and selectively generate at least one selected signal.

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